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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,734	01/12/2001	Sandra Hutchins	05313P002	9760

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD, SEVENTH FLOOR
LOS ANGELES, CA 90025

EXAMINER	
ARMSTRONG, ANGELA A	

ART UNIT	PAPER NUMBER
2654	18

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/759,734	HUTCHINS, SANDRA	
	Examiner	Art Unit	
	Angela A. Armstrong	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinser in view of Bergstrom (US Patent No. 5,809,459), in view of Lee et al (US Patent No. 5,617,507), hereinafter referred to as Lee, and further in view of well known prior art.

2. As per claim 1, Zinser discloses an apparatus comprising an encoder for compressing a plurality of signals (see col. 7, lines 13-14), based on a plurality of prioritized parameters to dynamically reduce signal bandwidth while preserving perceptual signal quality, (see col. 4, lines 31-35; col. 5, lines 1-40; col. 4, lines 54-56; col. 14, lines 35-60).

Zinser fails to explicitly teach an apparatus wherein the encoder comprises an epoch locator unit, a first and second epoch analyzer and a frame assembler unit. However, these features were well known in the art of speech compression.

In a similar field of endeavor, Bergstrom discloses an encoder comprising an epoch locator unit, (see Fig. 1, item 110), a first and second epoch analyzer, (see Fig. 8 and Fig. 9) and a frame assembler unit (Fig. 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an encoder comprising an epoch locator unit, a first and second epoch

analyzer and a frame assembler as taught by Bergstrom, for the purpose of improving speech compression rates without significant lost of quality.

Zinser does not specifically teach the data are transmitted at variable frame rates. However, implementation of variable frame rates in a compression scheme was well known in the art as a means to encode data or signals in an optimum and efficient manner.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to implement transmission of the signals in a compressed format at variable frame rates, as was well known in the art, for the purpose of encoding the data in an optimum or efficient manner, as was also well known in the art.

Zinser does not specifically teach wherein prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority. However, this feature was well known in the art, as evidenced by Lee who teaches speech segment coding and pitch control methods that selects and arranges the most appropriate parameters to ensure good quality synthetic speech will be generated (col. 17, line 65 to col. 21, line 51). Lee teaches that careful selecting of appropriate parameters helps to maintain the quality of the original speech (col. 2, lines 34-48).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority, as suggested by Lee, for the purpose of maintaining the quality of the original speech, as suggested by Lee (col. 2, lines 34-48).

Zinser does not teach combining epochs, correcting errors or extending epoch lengths. Bergstrom discloses the system performs pitch-epoch-synchronous speech coding by means or error component modeling methods, and specifically, at col. 9, lines 23-41, Bergstrom teaches epoch correlation and ensemble process; at col. 10, lines 25-55 and col. 16, lines 10-44, teaches epoch length expansion; and at col. 11, line 54 continuing to col. 12, line 22, teaches an ensemble interpolation process to reconstruct components. Bergstrom teaches that the system is beneficial in achieving high-quality speech natural sounding speech (col. 12, lines 3-4).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement the epoch processing of Bergstrom, for purpose of achieving natural sounding high-quality speech at the receiver, as suggested by Bergstrom.

As per claim 2, Zinser discloses a method wherein the transmission rate of the plurality of compressed signals is dynamically set, (see col. 14, lines 35-60).

As per claims 3, Zinser discloses a method wherein the plurality of compressed signals are speech signals, (see Abstract and col. 8, lines 36-48).

As per claim 8, Zinser discloses a method wherein a priority level of each of the plurality of prioritized parameters is based on quality of speech, (see col. 5, lines 5-40).

As per claim 9, Zinser discloses a parameter decoding unit couple to an excitation generator, (see col. 15, lines 19-30). A synthesizing filter coupled to the excitation generator, (see col. 15, lines 31-36). An output scaling and filtering unit coupled to the synthesizing filter, (see col. 15, lines 41-44). Additionally, Zinser discloses an apparatus comprising an decoder for decompressing a plurality of signals based on a plurality of prioritized parameters to dynamically

reduce signal bandwidth while preserving perceptual signal quality, (see Fig. 5; col. 15, lines 20-30; col. 14, lines 35-60).

Zinser fails to explicitly teach an apparatus wherein the decoder comprises a frame disassembler unit. However, implementation of this feature was well known in the art of speech compression.

In a similar field of endeavor, Bergstrom discloses a decoder comprising a frame disassembler unit (see Figure 29; col. 18, lines 7-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a decoder comprising a frame disassembler as taught by Bergstrom, for the purpose of improving speech compression and synthesis without significant lost of quality.

Zinser does not specifically teach the data are transmitted at variable frame rates. However, implementation of variable frame rates in a compression/decompression scheme was well known in the art as a means to encode data or signals in an optimum and efficient manner.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to implement transmission of the signals in a compressed format at variable frame rates, as was well known in the art, for the purpose of encoding the data in an optimum or efficient manner, as was also well known in the art.

Zinser does not specifically teach wherein prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority. However, this feature was well known in the art, as evidenced by Lee who teaches speech segment coding and pitch control methods that selects and arranges the most appropriate parameters to ensure good quality

synthetic speech will be generated (col. 17, line 65 to col. 21, line 51). Lee teaches that careful selecting of appropriate parameters helps to maintain the quality of the original speech (col. 2, lines 34-48).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority, as suggested by Lee, for the purpose of maintaining the quality of the original speech, as suggested by Lee (col. 2, lines 34-48).

Zinser does not teach combining epochs, correcting errors or extending epoch lengths. Bergstrom discloses the system performs pitch-epoch-synchronous speech coding by means or error component modeling methods, and specifically, at col. 9, lines 23-41, Bergstrom teaches epoch correlation and ensemble process; at col. 10, lines 25-55 and col. 16, lines 10-44, teaches epoch length expansion; and at col. 11, line 54 continuing to col. 12, line 22, teaches an ensemble interpolation process to reconstruct components. Bergstrom teaches that the system is beneficial in achieving high-quality speech natural sounding speech (col. 12, lines 3-4).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement the epoch processing of Bergstrom, for purpose of achieving natural sounding high-quality speech at the receiver, as suggested by Bergstrom.

3. As per claims 4-7, 10-13, 17-18, 23, 29-30, and 36, claims 4-7, 10-13, 17-18, 23, 29-30, and 36 are similar in scope and content to claims 1-3 and 8-9 rejected above, and therefore claims 4-7, 10-13, 17-18, 23, 29-30, and 36 are rejected under the same rationale.

4. As per claims 14, 26, Zinser discloses a method comprising:

receive a plurality of signals form a first transmission device, (see Fig. 1, item 102); encode the plurality of signals in a compressed format, (see col. 4, lines 31-35); and transmit the plurality of signals in a compressed format through a transmission medium based on a plurality of prioritized parameters to dynamically reduce signal bandwidth while preserving perceptual signal quality, (see col. 5, lines 1-40; col. 4, lines 54-56; col. 14, lines 35-60 and Fig. 1).

Zinser does not specifically teach the data are transmitted at variable frame rates. However, implementation of variable frame rates in a compression scheme was well known in the art as a means to encode data or signals in an optimum and efficient manner.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to implement transmission of the signals in a compressed format at variable frame rates, as was well known in the art, for the purpose of encoding the data in an optimum or efficient manner, as was also well known in the art.

Zinser does not specifically teach wherein prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority. However, this feature was well known in the art, as evidenced by Lee who teaches speech segment coding and pitch control methods that selects and arranges the most appropriate parameters to ensure good quality synthetic speech will be generated (col. 17, line 65 to col. 21, line 51). Lee teaches that careful selecting of appropriate parameters helps to maintain the quality of the original speech (col. 2, lines 34-48).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority, as suggested by Lee, for the

purpose of maintaining the quality of the original speech, as suggested by Lee (col. 2, lines 34-48). Zinser does not teach combining epochs, correcting errors or extending epoch lengths. Bergstrom discloses the system performs pitch-epoch-synchronous speech coding by means or error component modeling methods, and specifically, at col. 9, lines 23-41, Bergstrom teaches epoch correlation and ensemble process; at col. 10, lines 25-55 and col. 16, lines 10-44, teaches epoch length expansion; and at col. 11, line 54 continuing to col. 12, line 22, teaches an ensemble interpolation process to reconstruct components. Bergstrom teaches that the system is beneficial in achieving high-quality speech natural sounding speech (col. 12, lines 3-4).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement the epoch processing of Bergstrom, for purpose of achieving natural sounding high-quality speech at the receiver, as suggested by Bergstrom.

As per claims 20, 33, Zinser discloses a method comprising:

receive a plurality of signals form a first transmission device in a compressed format through a transmission medium based on a plurality of prioritized parameters to dynamically reduce signal bandwidth while preserving perceptual signal quality, (see Fig. 5 and Fig. 1, items 20, 17, 21; col. 15, lines 20-30);

Decode the plurality of signals and transmit the decoded signals to a first receiving device, (see Fig. 1, item 20 and 107).

Zinser does not specifically teach the data are transmitted at variable frame rates. However, implementation of variable frame rates in a compression scheme was well known in the art as a means to encode data or signals in an optimum and efficient manner.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to implement transmission of the signals in a compressed format at variable frame rates, as was well known in the art, for the purpose of encoding the data in an optimum or efficient manner, as was also well known in the art.

Zinser does not specifically teach wherein prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority. However, this feature was well known in the art, as evidenced by Lee who teaches speech segment coding and pitch control methods that selects and arranges the most appropriate parameters to ensure good quality synthetic speech will be generated (col. 17, line 65 to col. 21, line 51). Lee teaches that careful selecting of appropriate parameters helps to maintain the quality of the original speech (col. 2, lines 34-48).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority, as suggested by Lee, for the purpose of maintaining the quality of the original speech, as suggested by Lee (col. 2, lines 34-48).

Zinser does not teach combining epochs, correcting errors or extending epoch lengths. Bergstrom discloses the system performs pitch-epoch-synchronous speech coding by means or error component modeling methods, and specifically, at col. 9, lines 23-41, Bergstrom teaches epoch correlation and ensemble process; at col. 10, lines 25-55 and col. 16, lines 10-44, teaches epoch length expansion; and at col. 11, line 54 continuing to col. 12, line 22, teaches an

ensemble interpolation process to reconstruct components. Bergstrom teaches that the system is beneficial in achieving high-quality speech natural sounding speech (col. 12, lines 3-4).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement the epoch processing of Bergstrom, for purpose of achieving natural sounding high-quality speech at the receiver, as suggested by Bergstrom.

As per claim 40, Zinser discloses an apparatus comprising: means for encoding a plurality of input signals, the means for encoding including: means for identifying input signal segments, (see Fig. 1, item 102); means for extracting a plurality of parameters describing signal segments, (see col. 5, lines 1-40); and means for associating priority values to the plurality of parameters (col. 5, lines 1-40; col. 4, lines 45-56).

Zinser does not specifically teach the data are transmitted at variable frame rates. However, implementation of variable frame rates in a compression scheme was well known in the art as a means to encode data or signals in an optimum and efficient manner.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to implement transmission of the signals in a compressed format at variable frame rates, as was well known in the art, for the purpose of encoding the data in an optimum or efficient manner, as was also well known in the art.

Zinser does not specifically teach prioritized epoch parameters. However, this feature was well known in the art, as evidenced by Lee who teaches speech segment coding and pitch control methods that selects and arranges the most appropriate parameters to ensure good quality synthetic speech will be generated (col. 17, line 65 to col. 21, line 51). Lee teaches that careful

selecting of appropriate parameters helps to maintain the quality of the original speech (col. 2, lines 34-48).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement prioritized epoch parameters, as suggested by Lee, for the purpose of maintaining the quality of the original speech, as suggested by Lee (col. 2, lines 34-48).

Zinser does not teach combining epochs, correcting errors or extending epoch lengths. Bergstrom discloses the system performs pitch-epoch-synchronous speech coding by means or error component modeling methods, and specifically, at col. 9, lines 23-41, Bergstrom teaches epoch correlation and ensemble process; at col. 10, lines 25-55 and col. 16, lines 10-44, teaches epoch length expansion; and at col. 11, line 54 continuing to col. 12, line 22, teaches an ensemble interpolation process to reconstruct components. Bergstrom teaches that the system is beneficial in achieving high-quality speech natural sounding speech (col. 12, lines 3-4).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement the epoch processing of Bergstrom, for purpose of achieving natural sounding high-quality speech at the receiver, as suggested by Bergstrom.

As per claim 42, Zinser discloses an apparatus comprising: means for decoding a plurality of compressed signals; the decoding means including: means for reconstructing parameters from the plurality of compressed signals; means for constructing an excitation signal; means for producing a raw output signal; and means for producing a final output signal.

Zinser does not specifically teach the data are transmitted at variable frame rates. However, implementation of variable frame rates in a compression/decompression scheme was well known in the art as a means to encode data or signals in an optimum and efficient manner.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to implement transmission of the signals in a compressed format at variable frame rates, as was well known in the art, for the purpose of encoding the data in an optimum or efficient manner, as was also well known in the art.

Zinser does not specifically teach wherein prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority. However, this feature was well known in the art, as evidenced by Lee who teaches speech segment coding and pitch control methods that selects and arranges the most appropriate parameters to ensure good quality synthetic speech will be generated (col. 17, line 65 to col. 21, line 51). Lee teaches that careful selecting of appropriate parameters helps to maintain the quality of the original speech (col. 2, lines 34-48).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement prioritized epoch parameters are reduced based on each of said plurality of epoch data parameters respective priority, as suggested by Lee, for the purpose of maintaining the quality of the original speech, as suggested by Lee (col. 2, lines 34-48).

Zinser does not teach combining epochs, correcting errors or extending epoch lengths. Bergstrom discloses the system performs pitch-epoch-synchronous speech coding by means or error component modeling methods, and specifically, at col. 9, lines 23-41, Bergstrom teaches

epoch correlation and ensemble process; at col. 10, lines 25-55 and col. 16, lines 10-44, teaches epoch length expansion; and at col. 11, line 54 continuing to col. 12, line 22, teaches an ensemble interpolation process to reconstruct components. Bergstrom teaches that the system is beneficial in achieving high-quality speech natural sounding speech (col. 12, lines 3-4).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Zinser to implement the epoch processing of Bergstrom, for purpose of achieving natural sounding high-quality speech at the receiver, as suggested by Bergstrom.

5. As per claims 15-16, 19, 21-22, 24-25, 27-28, 31-32, 34-35, 37-39, 41, and 43, claims 15-16, 19, 21-22, 24-25, 27-28, 31-32, 34-35, 37-39, and 41 are similar in scope and content to claims 1-3, 8-9, 14, 20, 26, 33, 40 rejected above, and therefore claims, 15-16, 19, 21-22, 24-25, 27-28, 31-32, 34-35, 37-39, and 41, are rejected under the same rationale.

Response to Arguments

6. Applicant's arguments with respect to claims 1-42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fette et al (US Patent No. 5,579,437) discloses a pitch-epoch synchronous linear predictive coding vocoder and method.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Angela A. Armstrong
Examiner
Art Unit 2654

AAA
January 25, 2004

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER